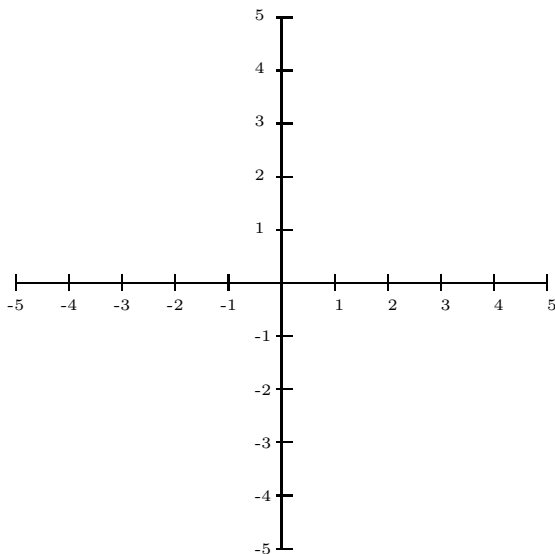


### QUIZ 9 (take home)

Name \_\_\_\_\_

1. Consider the function  $f(x) = \frac{2x^2}{x^2 - 1}$ . Find the Domain, Range, local and absolute extrema, asymptotes and points of inflection. Sketch a graph on the axes below. (You may need to work on the back of the sheet.)(10 pts)



2. Find  $\lim_{x \rightarrow 0} \frac{1 - \cos(x)}{x^2}$  (6 pts)

3. The equation  $\sin(\pi x) = x$  has a solution at  $x = 0$ . The equation has two more solutions, one positive value of  $x$  and one negative. Find an estimate, using Newton's method, for the negative  $x$ -value. (4 pts)